

Groundwater Mixing Zones

A groundwater mixing zone is one of many tools and options that may be used in appropriate situations when groundwater quality standards are not met at a site. Groundwater mixing zone requirements are contained in a state regulation (see <http://www.scdhec.net/environment/water/regs/r61-68.doc>). A groundwater mixing zone is considered as a corrective action for a site once the evaluation of the groundwater conditions at the site is complete. Groundwater Mixing Zones are designated only where groundwater contamination already exists. DHEC does not designate uncontaminated areas as groundwater mixing zones.

Key considerations for a groundwater mixing zone are as follows: groundwater that exceeds the standard is located on the property that it originated from, the contaminated groundwater is not and will not be used as a drinking water source, reasonable measures have been taken to minimize the addition of contaminants to ground water and/or control the migration of contaminants in ground water, and that it is reasonable to assume that the chemical concentrations in the groundwater will decrease over time.

Alternate groundwater quality limits are established within the mixing zone. A monitoring program is put in place to ensure the conditions of the groundwater mixing zone are met. If the conditions of the Groundwater Mixing Zone are not met, the site is re-evaluated with the possibility of another corrective action option being required.

Monitored Natural Attenuation (MNA) is a process that is similar to a groundwater mixing zone and used by the U.S. Environmental Protection Agency, DHEC and other states to address groundwater contamination. For more information about MNA, go to <http://www.clu-in.org/download/citizens/mna.pdf>. Under the MNA process, the contaminated groundwater cannot be used as a drinking water source, and the contamination is expected to naturally decrease over a reasonable period of time to acceptable levels. Monitoring of the contamination is performed to ensure that the expected decrease is taking place. Often Groundwater Mixing Zones or MNA are used at a site along with other clean up actions such as pumping and treating groundwater, and removing or isolating the source of the contamination.